

Remarks

Claims 76-114 are pending with this application. Claims 38, 40, 43-44, 47-48, 50-54, 56, 58, 65, and 69-71 have been withdrawn and should be considered for rejoinder upon the finding of allowed claims. Claims 1-37, 39, 41, 42, 45, 46, 49, 55, 57, 59-64, 66-68 and 72-75 have been previously cancelled without prejudice.

On page 2 of the Office Action, Claims 76-110, 113 and 114 were rejected under 35 U.S.C. 112, second paragraph, for being indefinite.

For Claims 76, 82-83, 86, and 92-94, it was requested that “the sealer” be clarified. Applicants have amended Claims 76, 82-83, 86, and 92-94 to address the rejection under 35 U.S.C. 112, second paragraph, and believe said amendments overcome the rejection. No new matter has been introduced with said amendments. Entry of each amended claim is respectfully requested.

Claims 77-81, 84-85, 87-91 and 95-110 were rejected for being dependent on Claim 76, rejected as identified above. With the above-referenced amendment to Claim 76, the rejection to the dependent claims under 35 U.S.C. 112, second paragraph, is believed to be overcome.

Claim 95 was rejected for being unclear with regard to “a cured product.” Applicants have amended Claim 95 to address the rejection under 35 U.S.C. 112, second paragraph, and believe the amendment overcomes the rejection. No new matter has been introduced with the amendment. Entry of amended Claim 95 is respectfully requested.

Claim 114 has been rejected for being dependent on Claim 113. Applicants respectfully submit that such dependency is not cause for rejection as Applicants are allowed to depend one dependent claim on another. Applicants understand that Claim 114 requires all the limitations of Claim 113, which does not make the claim unclear or indefinite.

On page 4 of the Office Action, Claims 76, 79-83, 85-86, 92, 94-96, 106-108 and 110 were rejected under 35 U.S.C. 102(b) as being anticipated by JP 2001-335385 (referred to by the Examiner as “Honda and hereinafter “Honda”) as evidenced by US Publication No.

2002/0139082 (hereinafter, “DeFord”). It is the Examiner’s position that Honda teaches a product having a sealer on a first and second major surface and the sealer has a thickness of 25-35 micrometers. Applicants respectfully disagree. Honda actually teaches a cement plate that has an acrylic lacquer on its top surface and an alkoxysilane on its bottom surface (para. [0005]; [0015]; Fig. 1). Honda states that it is with addition of an alkoxysilane on the untreated bottom surface only that the cement plate can hold its quality better. This is because Honda states that plates are normally untreated on its bottom surface and the bottom surface will, as a result, undergo carbonation (para. 0003]. Therefore, Honda is comparing its bottom surface treatment using an alkoxysilane (also expressly referred to by Honda, and known in the art as a “water repellent”) to a cement plate that has nothing (is untreated) on its bottom surface. Applicants submit that there is little doubt that adding a water repellent to a bottom cement surface will improve the bottom surface performance as compared with an untreated surface. It is further noted that Honda does not actually measure carbonation of the bottom treated surface, it merely measures freeze-thaw performance and swelling rate in the working (treated) examples 1-3 as compared with comparative (control) examples after examples are placed in an atmosphere containing some carbon dioxide (see Table 1; para. [0021]). Table 1 shows that there is some (maybe very little) change in the freeze-thaw performance of the working example (1.8, 2.2, 1.9, averaging 2.0) as compared with the control (2.0, 2.2, averaging 2.1) and some change in % swelling when the bottom surface is treated with the alkoxysilane water repellent of Honda, which would be expected (working example average: 2.9 vs. control: 5.05) or a water barrier of Honda. Applicants point out that the subject invention is intended to provide more than a water barrier but also to control internal carbonation (see, e.g., para. [0020] of Applicants published specification, US. Publication No. 2006/0182946). On the other hand, there is no evidence provided by Honda or by the Examiner that Honda is more than a mere water barrier treatment that is applied to only a single lower surface of a cement plate. Honda applied its water barrier to the bottom surface at 30-100 g/cm² (para. 0014], which is not 25-35 micrometers as proposed by the Examiner. The reference to 25-35 micrometers in Honda is actually a teaching of how much acrylic lacquer B is applied to the top surface only of a plate.

Hence, for the reasons set forth above, Honda does not anticipate the claims. The DeFord reference does not overcome the deficiencies of Honda. The Examiner has provided no evidence that DeFord teaches or suggests the claimed invention in view of the deficiencies of Honda. As such, it has been shown that Honda (with or without DeFord) does not anticipate the claims. Applicants respectfully request the rejection of Claims 76, 79-83, 85-86, 92, 94-96, 106-108 and 110 under 35 U.S.C. 102(b) be removed.

Applicants have amended the independent Claims 76 (as well as withdrawn Claim 38) to recite a cross-linked, radiation curable carbonation reducing sealer. Clearly, there is no evidence in Honda nor in deFord that either reference anticipates the amended language. The Examiner has provided no evidence that either reference anticipates the amended language. Thus, the amended language is not anticipated by Honda or by DeFord. Support for the amended language may be found throughout the specification, such as at paragraphs [0032], [0033], [0037], as examples.

On page 8 of the Office Action, Claims 76, 78-81, 83-85, 88-89, 92, 95, 106-109 and 110 were rejected under 35 U.S.C. 102(b) as being anticipated by DeFord. It is the Examiner's position that the facing of DeFord is the same as a sealer. Applicants respectfully disagree. DeFord's facing does not have an overall thickness of 15 microns. The Examiner points to Table 1 as showing a facing that is 0.068 inches thick. This is not 15 microns but 1727 microns. Applicants also respectfully point out that the facing in Table 1 is cement. It is known that cement undergoes carbonation (see Applicants own specification). Hence, the facing of Table 1 will undergo carbonation and not reduce differential carbonation. Thus, this example does not anticipate the claims. In fact, said example teaches against the claimed invention. The Examiner points to para. [0017] and [0097]-[0098] as teaching a facing (a proposed sealer, according to the Examiner) that forms "a mutually inter-penetrating bonding interface network" with the cement (core) board. Applicants respectfully point out that the facing in para. [0017] and [0097]-[0098] are all cement (see "uncured fiber cement facing" or "uncured fiber cement skins"). It is known that cement undergoes carbonation. Hence, all of the cement facings of para. [0017] and [0097]-[0098] will undergo carbonation. In addition, none of the fiber cement facings of para. [0017] and [0097]-[0098] (even if they inter-penetrate) will reduce differential carbonation. Thus, this

example also does not anticipate the claims. This example also teaches against the claimed invention. As such, it can be said the DeFord “teaches away” from the invention as claimed.

Applicants, thus, agree with the Examiner (see page 8 of the Office Action) that there is no teaching in the DeFord reference that the DeFord facings are able to reduce carbonation. The DeFord reference does mention that some non-woven fiberglass facings are able to “slow the rate of water permeation into the core material” (para. [0163]) or fiber cement facings have some surface abrasion resistance (para. [00157]) or fiber cement facings may offer flame or fire resistance (para. [00159]). Together, this merely shows that a facing of DeFord may, at best, serve as a partial water barrier, or offer some resistance to abrasion or fire. Hence, contrary to the Examiner’s position, there is no evidence in the reference itself or that one of ordinary skill in the art would consider after reading DeFord that a facing of DeFord would reduce carbonation. Due to the very teachings of DeFord, it is more likely than not that a conclusion would be reached that a facing of DeFord will actually undergo carbonation and this does not overcome the intention of reducing differential carbonation as claimed.

With regard to the use of the phrase “inter-penetrating” in DeFord, Applicants respectfully point out that it is only used with respect to fiber cement when provided both as a facing and a core—the reference teachings are clear that only with fiber cement to fiber cement layering is there any inter-penetrating mechanical or chemical bonding (i.e., fiber cement into fiber cement). Such a teaching in DeFord does not anticipate the claims. The Examiner’s position regarding a teaching of interpenetrating in DeFord (e.g., pgs 8, 9 of the Office Action) has no bearing and cannot be used for showing that DeFord anticipates the claims. In view of the foregoing, Applicants have shown that DeFord does not anticipate the claims nor can it be used for a showing of obviousness (since it deficient in various features as claimed). The DeFord reference has also been shown to teach away from the claimed invention.

On page 12 of the Office Action, Claims 87-88, 97-98 and 99 were rejected under 35 U.S.C. 103(a) as being obvious over Honda, as applied to Claim 76. For the reasons set forth above with regard to Honda, these claims also are not obvious over Honda. Honda must teach the reference on its whole to be obvious over the cited document and it does not. Honda is

defective in many aspects as discussed previously and cannot be relied on for obviousness. In addition, the Examiner agrees on page 12 of the Office Action that Honda is deficient with regards to the subject matter of Claims 87-88. Honda also specifically teaches a cement to silica ratio of 1.11 (para. [0017]), which is contrary to that claimed. Moreover, Applicants respectfully disagree and traverse the statement regarding a keycoat, in which it is said: "is just duplication of parts which provide no patentable weight." Applicants own specification shows that this is not just a duplication of parts. See for example, para. [0054].

On page 13 of the Office Action, Claims 78, 89-91, 101-105, and 111- 114 were rejected under 35 U.S.C. 103(a) as being obvious over Honda, as applied to Claim 76 and 108, in view of DeFord as evidence by a reference entitled "Perlite" (hereinafter, "Perlite"). For the reasons already set forth above, Applicants reiterate that Honda in combination with DeFord does not teach the invention as claimed. It is also reiterated that Honda specifically teaches a cement to silica ratio of 1.11 (para. [0017]), which is contrary to that of Claim 111. As such, there is no evidence in the references themselves or provided by the Examiner to shows that the references teach each and every element of said claims nor is there evidence provided by the Examiner or in the references that together they teach the claimed invention on its whole. The Perlite reference does not overcome any of the deficiencies of Honda or DeFord because the Perlite reference merely states the properties of perlite, an amorphous volcanic glass with a high water content.

On page 18 of the Office Action, Claims 96-105, and 111-114 are rejected under 35 U.S.C. 103(a) as being obvious over DeFord as applied to Claim 76 as evidenced by Perlite. Applicants reiterate the statements provided above and include the fact that, contrary to the Examiner's position, a cement facing or skin of DeFord as recited in para. [0039]-[0040] will not reduce differential carbonation and will actually teach away from the claimed invention. Hence, the reference cannot be used for showing of obviousness (regardless of the cement and silica content in the fiber cement core of DeFord).

On page 20 of the Office Action, Claims 76-84, 86-88, 92-100, 106-109 and 110 are rejected under 35 U.S.C. 103(a) as being obvious over JP 05/287234 (hereinafter, "Yonekawa") in view of Honda. Yonekawa teaches a coating added on cement mortar (which is not fiber

reinforced cement as claimed), the coating is a mixture of an acrylic polymer and silicon-based monomer. The coating of Yonekawa is not the same as what is taught by Applicant. Furthermore, the Yonekawa coating is not said to be nor is there any evidence that it is radiation curable. The Yonekawa coating is not said to nor is there any evidence that it interacts to form an inter-penetrating network extending into the surface of the cement board. The Examiner points to para. [0004] and [0009] of Yonekawa as providing evidence that Yonekawa teaches a sealer that is a carbon-reducing sealer. Applicants point out that para. [0004] of Yonekawa specifically states that a silicone oil or polysiloxane water repellent may offer some neutralization preventive effect, but it *does not last*. A silicone oil or polysiloxane water repellent is not the same as a cross-linked, radiation-curable carbonation reducing sealer as claimed. Applicants also point out that para. [0009] of Yonekawa specifically states that its acrylic polymer emulsion can form a film on the surface layer of concrete to block penetration of carbon dioxide. This expressly teaches away from forming an inter-penetrating network extending into the surface of the cement board, as claimed. If the Examiner believes that forming a film on the surface is equivalent to forming an inter-penetrating network extending into the surface of the cement board, then evidence must be provided. A mere conclusory statement to the effect is not sufficient for a showing of obviousness.

Applicants point out that even in view of *KSR*, the foundation for determining obviousness starts with *Graham*. [*KSR International Co. v. Teleflex Inc.*, 82 USPQ2d 1385, 1396 (2007); *Graham v. John Deere Co.*, 383 U.S. 1, 148 (1966)] Thus, the Examiner must resolve the *Graham* factual inquiries (MPEP 2143), which Applicants have shown has not been done. In addition, in *KSR*, the Supreme Court stated that “rejections on obviousness cannot be sustained by mere conclusory statements; instead there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.”

In Re Ravi Vaidyanathan (2009-1404, Fed. Cir. 2010) held that an Examiner is responsible for explicitly setting forth factual findings of obviousness. It was stated that there must be a persuasive explanation with evidentiary support as to how a person would select and apply the teaching(s) of each reference as well as a thorough reasoning with support as to why a person of ordinary skill would select and combine various features from different references to

arrive at the stated conclusion. It was further held that if such support could not be found in the prior art, then the Examiner may “choose instead to provide an affidavit detailing the examiner’s own personal knowledge (as a person approximating one of ordinary skill in the art) of the technology in question.” Applicants respectfully submit that neither the factual findings for obviousness nor an affidavit have been provided and, thus, the burden for providing a *prima facie* showing of obviousness has not been met.

Applicants have shown that Yonekawa fails in several of its teachings as evidenced above and does not anticipate the claims. Because of its failures, the reference does not teach the claimed invention on its whole and cannot be relied on for a showing of obviousness. In addition, Applicants have also previously shown that Honda fails in many similar teachings. As such, the combination continues to fail to teach or suggest each and every element of the claims or the claimed invention on its whole. Applicants respectfully submit that Claims 76-84, 86-88, 92-100, 106-109 and 110 are not obvious over Yonekawa in view of Honda.

On page 29 of the Office Action, Claims 111-114 are rejected under 35 U.S.C. 103(a) as being obvious over Yonekawa in view of DeFord. For the reasons set forth above, Yonekawa fails in teaching all elements of Applicants’ claimed invention or the invention on its whole. DeFord has also been shown to fail in a similar manner and to teach away from the claimed invention. The Examiner has provided no solid evidence of facts as to how the two in combination can be used for a showing of obviousness against the claims. Applicants agree with the Examiner that Yonekawa does not teach or suggest a fiber reinforced cement product and Yonekawa makes no mention at all of a cement to silica ratio. Furthermore, Yonekawa does not at all mention application of a keycoat or if its coating will operate with a keycoat. In fact, the coating of Yonekawa appears to be highly sensitive. For example it requires a specific pH to prevent hydrolysis (para. [0048]). Fiber cement boards are generally considered to be highly alkaline and may have a pH above 9. It may be possible that such a pH could affect hydrolysis of the coating composition of Yonekawa. Together, it is clear that Yonekawa cannot be relied on for obviousness with regard to Claims 111 to 114.

DeFord similarly fails to teach reducing differential carbonation for the reasons stated previously. The Examiner suggests that one skilled in the art would merely amend the cement mortar composition in Yonekawa to that taught by DeFord and achieve the same results as claimed. There is no evidence that this is operable based on the very teaching of Yonekawa as only capable of forming a film on the surface on the surface of cement and its ability to be hydrolyzed at an alkaline pH. Together, the evidence is clear that Claims 111-114 are not obvious over Yonekawa in view of DeFord.

Applicants respectfully request the rejections beginning on page 2 of the Office Action be removed and the application proceed to allowance.

Conclusion

In light of the amendments and remarks presented herewith, Applicants respectfully submit that claims provided in the Listing of Claims beginning on page 2 of this paper are in condition for allowance. Accordingly, favorable consideration for and allowance of the claims (including the withdrawn claims) are respectfully requested.

Fees for the appropriate extension of time accompany this paper. No additional fee is believed to be due with this submission. This paper also serves as a petition for an extension of time for any needed extension of time, such as pursuant to 37 C.F.R. § 1.136 or any other section or provision of Title 37. Applicants respectfully request that the Commissioner grant the petition. Applicants also authorize the Commissioner to charge any extension of time fee not provided with this submission to Deposit Account No. 07-0153 of Gardere Wynne Sewell LLP and reference Attorney Docket No. 131279-1050. Please credit any overpayments to this same Deposit Account. To the extent that any other relevant fee, other than the issue fee, is required with this paper, the Commissioner is hereby authorized to charge payment of such fees to the account referenced above

Should the Examiner have questions, comments, or suggestions in furtherance of the prosecution of this Application, please contact Applicants' representative at 214-999-4330. Applicants, through their representative, stand ready to conduct a telephone interview with the Examiner to review this Application if the Examiner believes that such an interview would assist in the advancement of this Application and/or place the application in condition for allowance.

This is intended to be a complete response to the Office Action mailed on the date of August 4, 2010.

Please direct all correspondence to the practitioner listed below at Customer No. 60148.

Respectfully submitted,

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